

I/We Claim:

1. A plug connection device, comprising:

a contact pin having an outer surface;

a receiving element having openings, each of the  
5 openings having an inner surface that contacts the outer  
surface of the contact pin when the contact pin is  
received therein; and

the plug connection device having grooves extending  
in a radial direction wherein a distance between adjacent  
10 grooves is smaller than a distance between adjacent  
openings.

2. The plug connection device according to claim 1, wherein  
the receiving element is made from a non-conductive  
15 material and the contact pin is made from a conductive  
material.

3. The plug connection device according to claim 1, wherein  
the grooves extend transversely to a mating direction of  
20 the contact pin.

4. The plug connection device according to claim 1, wherein  
machining marks are removed in an area of the grooves.

5. The plug connection device according to claim 1, wherein the grooves extend further in a radial direction than in a longitudinal direction.
- 5 6. The plug connection device according to claim 1, wherein the grooves are inclined with respect to a longitudinal direction.
7. The plug connection device according to claim 6, wherein  
10 the grooves are inclined by about 45 degrees.
8. The plug connection device according to claim 1, wherein the grooves have a teardrop shape.
- 15 9. The plug connection device according to claim 1, wherein the grooves are formed on the inner surface of the openings of the receiving element and the outer surface of the contact pins.
- 20 10. Contact pins for a plug connection device, each of the contact pins comprising:  
an outer surface with contact pin grooves extending in a radial direction, wherein a distance between adjacent contact pin grooves is smaller than a distance between  
25 adjacent contact pins.

11. The contact pins according to claim 10, wherein the contact pin grooves extend transversely to a mating direction of a receiving element.

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12. The contact pins according to claim 10, wherein machining marks are removed in an area of the contact pin grooves.

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13. The contact pins according to claim 10, wherein the contact pins are formed from a drawn metal wire.

14. The contact pins according to claim 10, wherein the contact pin grooves are inclined with respect to a longitudinal direction of the contact pin.

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15. The contact pins according to claim 14, wherein the contact pin grooves are inclined by about 45 degrees.

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16. The contact pins according to claim 10, wherein the contact pin grooves have a teardrop shape.

17. The contact pins according to claim 10, wherein the contact pin grooves extend further in a radial direction than in a longitudinal direction.

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18. A receiving element for a plug connection device,  
comprising:

openings with an inner surface, the inner surface  
having receiving element grooves extending in a radial  
5 direction, wherein a distance between adjacent receiving  
element grooves is smaller than a distance between  
adjacent openings.

19. The receiving element according to claim 18, wherein the  
10 receiving element is made from a non-conductive material.

20. The receiving element according to claim 18, wherein the  
receiving element grooves extend transversely to a mating  
direction of a contact pin.

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21. The receiving element according to claim 18, wherein  
machining marks are removed in an area of the receiving  
element grooves.

- 20 22. The receiving element according to claim 18, wherein the  
receiving element grooves extend further in a radial  
direction than in a longitudinal direction.

23. The receiving element according to claim 18, wherein the receiving element grooves are inclined with respect to a longitudinal direction of the opening.

5 24. The receiving element according to claim 23, wherein the receiving element grooves are inclined by about 45 degrees.

10 25. The receiving element according to claim 18, wherein the receiving element grooves have a teardrop shape.